

TESTICULAR GRAFTS.

SIR,—In the autumn of last year I read that Docteur Voronoff had been refused a hearing at a Parisian Medical Society on the ground (which was false) that he had already communicated the substance of his paper to the lay press. Several weeks later I heard that the Surgical Section of the Royal Society of Medicine had negatived the proposal that Docteur Voronoff should be invited to come over to England and explain his theories and practice. I therefore determined to go to Paris and investigate matters for myself, saying that there must surely be something of unusual value in the work of a man who was thus being held in the background. I thought of Harvey and Lister. So, just before Christmas, I went. I was fortunate, for on the morrow of my arrival Docteur Voronoff operated on a human patient, into whose tunica vaginalis he anchored portions of the testicle of a chimpanzee, and on the following day he was sufficiently at liberty to spend a considerable time in showing me over his laboratory, explaining his experimental work and displaying his results.

To begin with, a word about the man. Sergius Voronoff, like Metchnikoff, is a Parisianized Russian. He is between 40 and 50 years of age, tall, lean, dark, with the gentle manners of his race. His wife, who recently died, was an American lady with a very large fortune. He holds the position of Director of Experimental Surgery at the Collège de France, a high-browed institution whose officials, being pure scientists, are not allowed to practise for profit. It is thus obvious that the main charge levelled against him—namely, that he is a species of charlatan who is out to exploit the dead or dying sexuality of the senile—is as baseless as it is base. His work is not only unremunerative, it is very costly, and the whole cost of this work is defrayed out of his own pocket.

Many years ago Lorand put forward the theory that senescence was due to the dwindling activities of the thyroid gland. Experiments performed on animals convinced Voronoff that, although there was some truth in this view, it represented less than the whole truth. He therefore turned his attention to the only other endocrine which was as accessible as the thyroid to experimental research—namely, the male gonad. By a series of experiments on animals he showed that senescence can be delayed and senility rejuvenated by grafting young testicles into old animals. He also showed that a male animal castrated before maturity, which consequently failed to develop the secondary male characteristics, could be made to develop these characteristics by testicular grafting. Moreover, it became evident that such animals rapidly acquired the power of copulation, though not, of course, of reproduction. Into one normal young male goat he grafted an additional testicle, a third, with surprising results. The animal's horns grew to twice the length of the normal; so did its hair, especially its beard. It rapidly gave evidence of being grossly oversexed and became so combative and *méchante* that it had to be killed. The head and skin have been preserved, to convince the incredulous. Having thus satisfied himself by over 150 experiments of the potency of the gonadal hormone in rejuvenating old animals, masculating neuters, and overmasculating normal males, Voronoff decided to turn his attention to human beings, in order to see whether in them the hormone acted in the same way as it did in the lower animals. Into this part of the story I do not at present propose to enter. It is a fascinating story which ought to be, indeed must be, and shall be, told by Voronoff himself. There are, however, two points in connexion therewith which may suitably be emphasized here. The one is that the only animals possessing a gonad which is capable of being grafted into human beings are the anthropoid apes, preferably the chimpanzee. Chimpanzees are expensive; they cost from £100 to £150, and in all cases so far operated upon by Voronoff the expense has been borne entirely by him. The second point is that in his operations on the human invalid Voronoff's aim has never been that of restoring the mere sexual capacity. His object has been the rejuvenescence of the mental and muscular vigour, and the case to which he points with the greatest satisfaction is that of a man, an author, prematurely senile, to whom he has restored all his powers save only on the *côté génésique*. It is the facile fashion among certain ignorant people in this country to speak of the French as though they see only and think only of the sexual element in any and every subject. My purpose in writing the above has been to do something to dissipate this infantile and insular attitude, and to bring into its right perspective the really fine work of a wholly dis-

interested scientist who has conscientiously and generously laboured to increase our knowledge in a department of medicine which is of enormous and ever-growing importance.—I am, etc.,

London, W., Jan. 15th.

LEONARD WILLIAMS, M.D.

* * A review of a monograph by Dr. Voronoff, giving a detailed account of his theories and methods, was published in the BRITISH MEDICAL JOURNAL of October 21st, 1922 (p. 763).

OPERATIVE TREATMENT OF FRACTURES.

SIR,—While quite appreciating several of Mr. Charles Firth's points in his interesting letter in your issue of January 6th (p. 43), I would like to say that I purposely made very slight reference to *plating*, or to the details of the *plating* procedure. Nor did I discuss the many different views as to the most suitable type of plates and screws. Probably enough has been written already on that subject. Laue's work, of course, still stands—as I think—unchallenged.

I did emphasize, however, the unsuitability of ordinary silver wire for the usual wiring procedures, and recorded in my paper how we had been led to seek for a material which would justify a larger application of the procedure of wiring. This material we found in the brass wire I referred to, and I can only repeat here what I said in my paper—namely, that we have found it reliable, capable of standing any of the ordinary strains, and pliable to work with. We do not find that it is acted on by the tissues to an extent that can matter.

Per contra, I think I may doubt the statement of Mr. Firth that the iron wire he suggests is "not acted on by any of the tissues." We have found steel pins much eaten away even in the space of a very few weeks. Iron must surely oxidize in the tissues.

In any case, the matter can be submitted very easily, and very simply, to the test, either of ordinary experience or of experimental investigation. I am quite open to try some of the wire Mr. Firth suggests if he will be good enough to send me some or to indicate where it may be procured. I beg to thank him for his interesting note.—I am, etc.,

Glasgow, Jan. 10th.

ARCHIBALD YOUNG.

"ANGELS AND MINISTERS."

SIR,—I welcome the companionship of your leader if it be only for some of the way. We shall have a friendly journey up to this statement: "But entry into the House of Commons turns so largely upon the play of party politics, and the changes and chances of political life are so great, that when a Government has to be formed, a medical statesman of the first magnitude may not be at hand. Such a man may be amongst us to-day; yet when he went out of office it might be said with truth: 'Here was a Caesar! when comes such another?'" But unless the cheerful vigour so generously attributed to me can succeed in dissipating such fears and in making it plain that men of the medical profession are not less versatile than men in other professions, we part company at this "conclusion of the whole matter"—namely, at the doubt expressed whether the medical profession would be able to produce a continuity of medical statesmen of the first magnitude. My answer is that it can, otherwise our great profession is unworthy of its high calling and is in a parlous state indeed.

In passing doubts upon this crucial point your leader is leading the members of the Association and the general public to understand that the medical profession is so limited in resource that it cannot produce men capable of administering affairs which, under proper revision, would be essentially within its own province. Such an admission appears to me to be hopeless, derogatory, and entirely untrue, and never before has the intelligence of a responsible body of men been so grievously assaulted.

Why should your leading article fear that men taken from our own profession should fail, and yet give everyone the impression that no such anxiety is felt about the capability of men taken from other professions? Instead of fighting a fallacy this is to foster one that has prevailed too long.

Does your article desire to attribute to Sir Alfred Mond and Sir Arthur Griffith-Boscawen imperial powers of administrative intelligence denied to medical men? The article concludes with a quotation about Caesar; I will conclude with another which may be as apt and gives expression to my point: "Render unto Caesar the things that are Caesar's."—I am, etc.,

London, W., Jan. 16th.

G. LENTHAL CHEATLE.